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Duncan

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(54) **MULTI-CHAMBER CONTAINER**

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See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

1,848,846 A 3/1932 Schell
2,655,290 A * 10/1953 Mansperger A47K 5/10 222/181.2

(Continued)

FOREIGN PATENT DOCUMENTS

GB 1 180 427 2/1970
JP H10-72051 3/1998

(Continued)

OTHER PUBLICATIONS

International Search Report and the Written Opinion issued in International Application PCT/US2012/065744 mailed Aug. 9, 2013.

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(57) **ABSTRACT**

Provided is a multi-chamber container for dispensing flowable substances, comprising a body and a closure movable relative to the body. The body comprises respective storage chambers for storing respective flowable substances, and a vessel defining respective outlet zones having respective outlets and a separator between the outlet zones, and movable relative to the storage chambers between a first position and a second position. The body also comprises respective inlets that fluidly connect the respective storage chambers with the respective outlet zones, and first and second members that are each movable between (a) an inactive state, at which the respective member seals a respective inlet to isolate a respective storage chamber from a respective outlet zone and a respective outlet is open so that the respective outlet zone is in fluid communication with a downstream side of the respective outlet, and (b) an active state, at which the respective member seals the respective outlet to isolate the respective outlet zone from the downstream side of the respective outlet, and the respective inlet is open so that the respective storage chamber is in fluid communication with the respective outlet zone. Movement of the vessel between the first position and the second position causes the first and second members to move between their respective inactive and active states.

32 Claims, 4 Drawing Sheets